



OW Management Report for Hurricanes Harvey, Irma and Maria – October 1, 2017
EOC Water Desk (updated information highlighted)

Note: Hurricane Irma Report begins on page 5

EPA HQ:

Water Desk Staffing for the coming week:

Sunday 9/30: Nushat Thomas

Monday 10/1: Kevin Tingley

Tuesday 10/2-Wednesday 10/3: Sam Hernandez

Thursday 10/4-Friday 10/5: Holly Arrigoni

Notable Updates

- PREPA reports that 95% of their clients are without service. PREPA Director and US Army Corps of Engineers Chief, General Todd Semonite, provided their plan to reestablish electricity in the island. It is divided in 4 phases that will be implemented simultaneously: (1) install temporary generators in priority areas; (2) assure power plants' generation; (3) reparation of transmission lines, particularly those from south to northern Puerto Rico; and (4) reparation of distribution system. They highlighted that the repair of the transmission and distribution system will be the most complicated task and will take time. USACE Chief was clear that there should be no expectation that energy service will be reestablished quickly. USACE Engineer Jose Sanchez will lead the efforts to reestablish electricity in Puerto Rico. PREPA Director informed that many sectors in southern and western Puerto Rico will start to be energized as the Aguirre and Costa Sur Power Plants are operational.
- The humanitarian crisis – particularly in Puerto Rico – is growing, as residents in more remote areas are lacking food, water and medicine. Several patients in hospitals have reportedly died because there was no electricity to power medical equipment. Overall command of the federal response is now with the military (Generals Richard Kim & Jeffrey Buchanan).
- EPA has responded to a request that FEMA received from a Vermont Congressman for information on the safety and distribution of water from 4 cisterns on Vieques. EPA provided guidance from CDC and EPA on cistern disinfection and making drinking water safe following natural disaster.
- PRASA reports that 50% of clients are without drinking water service. PRASA Director indicated that their focus at this time has been supplying diesel to generators at the main wastewater treatment plants in order to control public health and environmental impacts.
- Non- PRASA drinking water facilities: In Puerto Rico, there are 297 independent private and community



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water treatment systems that serve approximately 4% of the population. In a meeting between FEMA, USACE, EPA and DOH to coordinate federal support to Non-PRASA drinking water facilities, they recommended the deployment of 8 Assessment Teams of EPA and DOH staff starting Monday, 10/2/2017. The first assessment visits will be to NON-PRASA systems in the Municipality of Caguas.

- EPA collected 24 drinking water samples and analyzed for E. coli and total coliform in St. Croix on 9/28/2017. Of the 24 drinking water samples collected, 10 samples indicated the presence of E. coli. DPNR visited all locations that tested positive for E. coli in drinking water to require disinfection and recollect samples after disinfection. EPA will continue coordinating with DPNR to ensure disinfection measures are taken at all affected locations.
- USVI Water and Power Authority (WAPA) is reporting they are operating at 1/3 of typical drinking water distribution capacity on St. Croix. WAPA collected and analyzed 20 samples from WAPA operated drinking systems. All results indicate no issues with the drinking water quality from WAPA systems.
- Hurricane Harvey activity has transitioned from response to recovery. Contact Claudia Hosch, EPA Region 6 Recovery Coordinator, with questions at 214-665-6465.



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Hurricane Maria Update – Puerto Rico and US Virgin Islands

Deep tropical moisture is expected to bring numerous showers and thunderstorms to Puerto Rico and the U.S. Virgin Islands through 10/1. The potential exists for frequent cloud to ground lightning and heavy rainfall which may cause additional flash flooding especially for areas that remain saturated from recent heavy rainfall. Rainfall amounts of 1-3 inches are possible in Puerto Rico, with 3-5 inches in localized areas thru Monday morning, and a flash flood watch continues for Puerto Rico and the US Virgin Islands (thru 10/1).

The Puerto Rico (PR) and USVI Emergency Operations Centers (EOCs) remain at Full Activation.

As of 9/27/17, the personnel information from the EPA re-deployment plan was provided to FEMA so flights and lodging needs can be coordinated for the first wave of EPA responders. Flights for EPA personnel continued to be postponed, as the priority is still the life-saving and life sustaining mission. Suitable lodging on PR remains a challenge.

- Puerto Rico: 120 people (50 people on 9/30 + 50 people on 10/1 + 20 people on 10/7)
- St Croix: 68 people (34 people on 9/30 + 34 people on 10/2)
- St Thomas: 68 people (34 people on 10/1 + 34 people on 10/2)

CEPD – All CEPD personnel are accounted for and safe. Thanks to the CID/NCERT agents that assisted CEPD locate our EPA employees.

Local/State Activities

Puerto Rico:

PREPA Director and US Army Corps of Engineers Chief, General Todd Semonite, informed their plan to reestablish electricity in the island. It is divided in 4 phases that will be implemented simultaneously: (1) install temporary generators in priority areas; (2) assure power plants' generation; (3) reparation of transmission lines, particularly those from south to northern Puerto Rico; and (4) reparation of distribution system. They highlighted that the repair of the transmission and distribution system will be the most complicated task and will take time. USACE Chief was clear that there should be no expectation that energy service will be reestablished quickly. USACE Engineer Jose Sanchez will lead the efforts to reestablish electricity in Puerto Rico. PREPA Director informed that many sectors in southern and western Puerto Rico will start to be energized as the Aguirre and Costa Sur Power Plants are operational.

U.S. Virgin Islands (USVI):

As of 0830 on 9/27/2017 (no update for 10/1), power outages for USVI include: St. Thomas: 19,574 (99%); St. John: 2,893 (100%); and St. Croix: 25,274 (90%). FEMA has indicated that there will be two power-supplied labs: one in St. Thomas (supplied with a functioning generator) and one in St. Croix (pending generator installation).



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Federal Activities

FEMA:

The USACE has received a mission assignment under ESF 3 for water and wastewater Subject Matter Experts (SMEs) to assess PRASA facilities in response to Hurricane Maria in Puerto Rico. USACE and EPA are coordinating a potential sub-tasking for EPA support similar to that done in Florida for Hurricane Irma.

FEMA National Response Coordination Center (NRCC) remains at Level I (Full Activation).

EPA Region 2 Activities

Hurricane Irma Recovery Update. In terms of recovery Mission Assignments (MAs), Region 2 is working with FEMA on developing a short term (30 day) Recovery MA for Hurricanes Irma and Maria. Since the NDRF has not yet been activated, the first MA will be supported by the National Response Coordination Center (NRCC) authority to pre-stage RSF coordinators and partners for the initial data gathering and recovery planning work.

Drinking Water and Wastewater System Status

Puerto Rico:

PRASA reports that 50% of clients are without drinking water service. PRASA Director indicated that their focus at this time has been supplying diesel to generators at the main wastewater treatment plants in order to control public health and environmental impacts. Of PRASA's total 52 total plants, 9 are operational, 19 are non-operational, and 24 have an unknown operational status.

Non-PRASA drinking water facilities: In Puerto Rico, there are 297 independent private and community water treatment systems that serve approximately 4% of the population. In a meeting between FEMA, USACE, EPA, and DOH to coordinate federal support to Non-PRASA drinking water facilities, they recommended the deployment of 8 Assessment Teams of EPA and DOH staff starting Monday, October 2. The first assessment visits will be to the Non-PRASA systems in the Municipality of Caguas.

EPA has received several requests for DW/WW analytical and assessment and sampling support from USACE, PRASA, and PRDOH. REOC and IOF staff are preparing supporting documentation to support the eventual Mission Assignment that will cover all of these requests.

CEPD DW and WW section conducted assessments at 7 PRASA WWTP facilities.

CEPD DW and WW section conducted assessments at 3 PRASA water quality laboratories. Two of the three (Arecibo & Caguas) were found to have significant storm damage.



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PR Drinking Water and Wastewater Assessments (September 29, 2017)		
Assessment Types	Daily Assessments	Total Assessments
On-Site DW Assessments	4	4
On-Site WW Assessments	8	8

Virgin Islands: <http://www.viwapa.vi>

The Army National Guard has supplied four reverse osmosis units. The RO units are currently located on STX, however, the units are not currently deployed and it is unclear when and where the units will be utilized.

Ocean Systems water testing: EPA is still working to procure a contract with Ocean Systems for sampling and lab analysis on St. Croix (STX), St. Thomas (STT), and St. John (STJ). The Ocean Systems lab on STT is functioning under generator power. The Ocean Systems lab on STX is not operational due to lack of power, EPA has requested and is waiting for FEMA to provide a generator for this facility. Until a generator secured for the STX lab, EPA will continue to analyze the collected water samples on STX utilizing a Colilert field test kit for the presence/absence of bacteria.

STX Drinking Water: EPA collected 24 drinking water samples and analyzed for E. coli and total coliform. Of the 24 drinking water samples collected on Thursday, 9/28/2017, 10 samples indicated the presence of E. coli. DPNR visited all locations which had tested positive for E. coli in drinking water to require disinfection and to recollect samples after disinfection. EPA will continue coordinating with DPNR to ensure disinfection measures are taken at all affected locations.

- Total Public Water Systems on St Croix sampled to date = 59
- Total number of samples to date= 68
- Total systems assessed to date = 89
- Total number of systems with positive E. coli results = 12
- Total number of systems resampled after positive E. coli = 12
- Total number of systems with negative E. coli results after resampling = 12

Of the 12 drinking water samples collected on 9/27/17, one sample was positive for bacteria. EPA will continue to coordinate with DPNR to notify the proprietor of the system and ensure disinfection measures are taken.

WAPA is reporting they are operating at 1/3 of typical drinking water distribution capacity on STX. WAPA collected and analyzed 20 samples from WAPA operated drinking systems. All results indicate no issues with the drinking water quality from WAPA systems.



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STT Drinking Water: EPA met with WAPA personnel to discuss oil spill issues near a WAPA drinking water intake in Krum Bay. The oil spill is originating from sunken and partially sunken vessels in Krum Bay. WAPA has boomed off the drinking water intake and collects samples of the drinking water supply on a regular basis. To date, sample analysis has indicated the water system has not been impacted by the oil spill. EPA is meeting with the USCG to discuss further prevention and remediation strategies for the mitigation of the oil spill.

EPA will conduct fixed facility assessments through this weekend and will coordinate with VI Department of Planning and Natural Resources (DPNR) to begin drinking water sampling on 10/2/2017; samples will be analyzed at the Oceans Systems Lab in St. Thomas for coliform.

STX Waste Water:

- The main treatment station located at the airport is operating on primary power. No critical needs at this time.
- 2 main feeders need a generator for power, 1 feeder has a generator
- 3 lift stations are bypassing due to no power. All need a generator

STT Waste Water

- 4 pump stations are currently bypassing to residential streets due to no power. All need a generator.
- 1 pump station is operating on generator power
- 3 WWTP are currently operating on generator power
- 1 WWTP is having issues with their clarifier

STJ Waste Water

- 3 facilities operating on generator power
- 3 facilities not operational due to no power. All need a generator

USVI Drinking Water and Wastewater Assessments (September 29, 2017)		
Assessment Types	Daily Assessments	Total Assessments
On-Site DW Assessments	11	40
On-Site WW Assessments	0	0



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Hurricane Irma Update – Florida

Region 4 is now providing reports on Mondays, Wednesdays, and Fridays. Updated information will appear in the OW Management Report on 10/2/2017.

Local/State and other Federal Agency Activities

The FL EOC is at Partial Activation and the MS, TN, and, NC EOCs are at Monitoring. The EPA Region 4 REOC remains at Level 3 activation. The REOC will go to remote operations over the coming weekend.

The FEMA Region IV RRCC transitioned from Level II (full activation) to normal operations. All members of the RRCC were released, including staff under ESF-10.

EPA Region 4 Activities

The USACE and the Water Protection Division has completed their field mission of assisting FDEP in assessing the status of drinking water and wastewater facilities. The FAST completed 592 assessments of the 1,112 non-community drinking water systems assigned to the team by FDEP. Pending receipt of new assignments, EPA Water Team members have demobilized.

Drinking Water and Wastewater System Status

Florida: See tables below for damage assessment information for community drinking water systems and POTWs.

Boil water notice (BWN) or advisories are published on the Florida Department of Health's website (<http://www.floridahealth.gov/environmental-health/drinking-water/boil-water-notice.html>).

Total Number of Community Drinking Water Systems (CWS) and Total Population				
	Large CWS (Over 3,300)		Small CWS (under 3,300)	
	# Systems	Population Served	# Systems	Population Served
Operational:	395	19,210,964	1,192	683,098
Partially Operational:	1	77,500	14	15,084
Non Operational:	0	0	3	255
Unknown:	0	0	34	10,916
Totals:	396	19,288,464	1,244	710,553
Boil Water Notices	58 Active BWN			



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Comments: Data is compiled from the State of Florida's StormTracker system. The inventory of public water systems in StormTracker consists of all 1,630 Community Water Systems (CWS) and 11 non-community public water systems regulated by the State. These facilities were identified by Florida as the most critical for operational status determinations following major disasters. For convenience, all 1,641 facilities are reported as "CWS" in this table.

Operational: Facility producing drinking water for greater than 90% of customers under normal operating conditions

Partially Operational: Facility producing drinking water under adverse conditions and/or supplying less than 90% of customers

Non Operational: Facility not producing or supplying drinking water

Unknown: Status of facility unknown at this time

**Total Number of Publicly-Owned Wastewater
Treatment Plants (POTWs) All Florida Counties**

	NPDES Permitted Facilities		State Permits (Non-NPDES)
	POTW	Non-POTW (Industrial)	
Operational:	143	242	1,766
Partially Operational:	2	1	33
Non Operational:	0	0	88
Unknown:	0	0	121
Totals:	145	243	2,008

Comments: Data is compiled from the State of Florida's StormTracker system. The NPDES universe tracked in StormTracker represents a subset of the total inventory of NPDES permitted systems that are identified by the State of Florida as the most critical for operational status determinations following major disasters.

This report shows that 99% of the POTWs are Operational, no change since last report of 99%.

This report shows that 99% of the Non-POTW NPDES Permitted Facilities tracked in StormTracker are Operational, no change since last report of 99%.

Operational: Facility & associated collection system is properly conveying, and effectively providing wastewater treatment, in accordance with applicable permit conditions and regulations. (Operating on full or backup generator power.)

Partially Operational: Facility and/or associated collection system is properly conveying and providing wastewater treatment at a compromised capacity, i.e. one or more treatment train components are non-operational, one or more lift stations are non-operational, etc.

Non Operational: Facility and/or associated collection system is not providing wastewater treatment in accordance with applicable permit conditions and regulations.

Unknown: Status of facility unknown at this time